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10/529,078	03/24/2005	Ulrike Hees	268261US0PCT	1838
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.			EXAMINER	
1940 DUKE STREET			KHAN, AMINA S	
ALEXANDRIA, VA 22314			ART UNIT	PAPER NUMBER
			1796	
NOTIFICATION DATE	DELIVERY MODE			
12/12/2008	ELECTRONIC			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/529,078	<b>Applicant(s)</b> HEES ET AL.
	<b>Examiner</b> AMINA KHAN	<b>Art Unit</b> 1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 August 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 11-30 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 11-30 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date: _____	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

1. This office action is in response to applicant's amendments filed on August 20, 2008.
2. Claims 11-30 are pending. Claims 21-30 are new. Claims 11,14,15 and 19 have been amended.
3. The objection to the specification has been withdrawn in view of applicant's amendments.
4. The objection to claim 16 is withdrawn in view of applicant's arguments.
5. The rejection of claim 11 and 19 under 35 U.S.C. 112, second paragraph, are withdrawn in view of applicant's amendments.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 11-17 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchida et al (US PGPub 2002/0071941) in view of Thetford et al (WO 02/38645).

With regards to claim 11 and 17, Tsuchida et al teaches an aqueous liquor used for coating substrates for inkjet printing comprising:

(A) one or more polyatomic compounds ([0038]/L5-6, “poly (diallyldimethylammonium chloride)”),

(C) optionally customary additives ([0041]/L4-7, "anti-foaming agent", "foam-inhibitor", "anti-fungus agent"), and

(D) water ([0033]).

Tsuchida et al also teaches that thickening agents ([0041]/L3) can be incorporated as an additive.

However, while the reference teaches using a thickening agent, Tsuchida et al does not specifically disclose using (B) one or more associative thickeners of the general formula (I), (II) and/or (III)

U-[-T-(M)y-]x-U (I)

U-(M)y-U (II)

U-T-U (III)

where: (M)y is a unit derived from polyalkylene ether, M being an individual alkylene ether unit and y being from 1 to 100,000 (page 5, lines 15-25), T is in each occurrence the same or different unit derived from a diisocyanate, x is on average from 1 to 500, U is in each occurrence the same or different unit of at least 4 carbon atoms that is derived from aliphatic or aromatic alcohols, alkoxylated alcohols, thiols, amines or carboxylic acids.

Thetford et al discloses the synthesis and use of various polyether/polyurethane association thickeners in polar media to provide good flow and leveling characteristics to water-borne coatings and latex systems (P1/L9-10). Thetford et al describes polyether/polyurethane association thickeners of formula (I) resulting from the reaction of polyalkylene mono alkyl ethers, such as nBuO PPG 340-4000 (P5/L13) with a C<sub>6</sub>-C<sub>30</sub>

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alk(en)ylsuccinic anhydride (P4/L18-19) followed by reaction of the resulting succinyl polyether with a polyisocyanate (P7/L13-15) followed by addition of an aliphatic alcohol, such as n-butanol (P8/L17-18) in which case  $U_1=n$ -butyl, T=polyisocyanate, (M)y= PPG 340,  $U_2=C_6-C_{30}$  alk(en)ylsuccinate, and x=1. Thetford et al also describes thickeners of formula (II), such as the product of reacting a  $C_6-C_{30}$  alk(en)ylsuccinic anhydride (P4/L18-19) with a monofunctional polyether, such as a nBuO PPG 340 (P5/L14), in which case  $U_1=n$ -butyl, (M)y=PPG 240, and  $U_2=C_6-C_{30}$  alk(en)ylsuccinate as well as thickeners of formula (III), such as the product of reacting PEO amine 6000 with *n*-hexadecylsuccinic acid and then TDI (P9/L32), in which case  $U_1=$  PEO amine 6000, T=TDI,  $U_2=n$ -hexadecylsuccinate).

One of ordinary skill in the art at the time of invention would have recognized and used the thickeners of Thetford et al in the composition of Tsuchida et al with the predictable result of controlling the rheology of the coating described by Tsuchida et al. Since Tsuchida et al teaches the incorporation of a thickening agent to a composition comprising poly (diallyldimethylammonium chloride), it would have been obvious to one of ordinary skill in the art to choose the thickeners of Thetford et al from a finite number of identified and predictable thickeners compatible with poly (diallyldimethylammonium chloride) to control the rheology of said composition.

With regards to claims 12-15, modified Tsuchida et al teaches an aqueous pretreatment liquor as set forth above, wherein said polycationic compounds (A) are polymers or copolymers of diallyldialkylammonium monomers (Tsuchida et al, [0038]/L5-6, "poly (diallyldimethylammonium chloride)");

- wherein said polycationic compounds (A) are a diallyldimethylammonium chloride homopolymer (Tsuchida et al, [0038]/L5-6, "poly (diallyldimethylammonium chloride)");

- wherein said compounds of the general formula (I) are obtained from (i) polyetherdiols (Thetford et al, P4/L20-P5/L35; one of ordinary skill will recognize that polyalkyleneglycol monoalkyl ethers, monoamines, monoalkyl ether monoamines, and diamines can be obtained from the parent polyalkyleneglycol) (ii) diisocyanates (Thetford et al, P1/L26-33), and (iii) compounds, R of the general formula R-OH, R-SH, R-NH<sub>2</sub>, RR'NH or R-COOH, where R is a hydrophobic aliphatic or aromatic radical of at least 4 carbon atoms and R-OH may have been alkoxylated, and also further derivatives thereof that are capable of forming a urethane, thiourethane or urea bond (Thetford et al, P8/L18, "n-butanol"), said compounds of the formula (II) are obtained from (i) polyetherdiols (Thetford et al, P4/L20-P5/L35; one of ordinary skill would recognize that polyalkyleneglycol monoalkyl ethers, monoamines, monoalkyl ether monoamines, and diamines can be obtained from the parent polyalkyleneglycol) with (iv) compounds of the general formula R-OH or R-COOH, where R is a hydrophobic aliphatic or aromatic radical of at least 4 carbon atoms and R-OH may have been alkoxylated, and also further derivatives thereof that are capable of forming an ether or ester bond (Thetford et al, P8/L18, "n-butanol"), and said compounds of the formula (III) are obtained from said compounds (ii) (Thetford et al, P1/L26-33) and (iii) (Thetford et al, P8/L18, "n-butanol");

- wherein said polyetherdiols (ii) are at least one selected from the group consisting of polyethylene glycol (Thetford et al, P5/L4-7), polypropylene glycol and polytetrahydrofuran and copolymers of ethylene oxide and propylene oxide (Thetford et al, P5/L8-11) or butylene oxide and terpolymers of ethylene oxide and propylene oxide and butylene oxide.

With regards to claim 16, modified Tsuchida et al discloses all of the claim limitations set forth above. While the references teach an aqueous pretreatment liquor comprising polycationic compounds, thickeners, customary additives, and water, the references do not teach the weight percentages of each component.

With regards to polycationic compounds, since the instant specification is silent to unexpected results, the weight percentage of polycationic compounds is not considered to confer patentability to the claim. As the level of dye fixing is a variable that can be modified by adjusting the amount of polycationic compounds in the composition, the weight percentage of polycationic compounds would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentage cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of polycationic compounds to achieve optimal dye fixation on the inkjet receiving substrate (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior

art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to water and thickeners, since the instant specification is silent to unexpected results, the weight percentage of water and thickeners is not considered to confer patentability to the claim. As the rheology of said composition is a variable that can be modified by adjusting the amount of water and thickener in the composition, the weight percentages of water and thickener would have been considered result effective variables by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentages cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of water and thickener to achieve the appropriate rheology desired for use on an inkjet-recording substrate (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to customary additives, since the instant specification is silent to unexpected results, the weight percentage of customary additives is not considered to confer patentability to the claim. The look and ease of handling of said composition is a variable that can be modified by adjusting the amount of customary additives in the composition, the weight percentage of customary additives would have been considered a result effective variable by one having ordinary skill in the art at the time the invention

was made. As such, without showing unexpected results, the claimed weight percentage cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of customary additives to achieve the appropriate look and handling characteristics desired for use on an inkjet-recording substrate (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

10. Claims 18-20,28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchida et al (US PGPub 2002/0071941) in view of Thetford et al (WO 02/38645) as applied to claim 11 above and in further view of Aoki (US patent 5,976,673).

With regards to claim 18, modified Tsuchida et al teaches a process for pretreating a substrate for inkjet printing, which comprises applying the aqueous pretreatment liquor as set forth above to said substrate and subsequently drying ([0031]/L9, "drying") the impregnated substrate ([0063]).

However, modified Tsuchida et al does not teach the process wherein the substrate is a textile.

Aoki discloses a similar process for pretreating a *textile* substrate (C10/L55, cloth) for inkjet printing, which comprises applying an aqueous pretreatment liquor to said substrate and subsequently drying the impregnated substrate (C10/L55-63).

Therefore, it would have been obvious to one of ordinary skill in the art to use the textile substrate disclosed by Aoki in the process taught by modified Tsuchida et al because textile materials are known in the art to be suitable substrates for inkjet printing and would amount to nothing more than substitution of known materials for use in a known process.

With regards to claim 19, modified Tsuchida et al teaches a process for printing a substrate by an inkjet process, which comprises applying the aqueous pretreatment set forth above, drying the impregnated substrate ([0063]) and printing said impregnated substrate by the inkjet process ([0097]).

However, modified Tsuchida et al does not teach the process wherein the substrate is a textile.

Aoki discloses a similar process for pretreating a *textile* substrate (C10/L55, cloth) for inkjet printing, which comprises applying an aqueous pretreatment liquor to said substrate and subsequently drying the impregnated substrate (C10/L55-63). Aoki further discloses using disperse dyes to print polyester(column 5, lines 65-67).

Therefore, it would have been obvious to one of ordinary skill in the art to use the textile substrate disclosed by Aoki in the process taught by modified Tsuchida et al because textile materials are known in the art to be suitable substrates for inkjet printing and would amount to nothing more than substitution of known materials for use in a known process.

With regards to claim 20, modified Tsuchida et al teaches all the claim limitations as set forth above. Modified Tsuchida teaches the process used on the textile substrate of Aoki to obtain a printed textile substrate.

11. Claims 18-20,28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchida et al (US PGPub 2002/0071941) in view of Thetford et al (WO 02/38645) as applied to claim 11 above and in further view of Bagwell (US 2002/0081421).

With regards to claim 18, modified Tsuchida et al teaches a process for pretreating a substrate for inkjet printing, which comprises applying the aqueous pretreatment liquor as set forth above to said substrate and subsequently drying ([0031]/L9, "drying") the impregnated substrate ([0063]).

With regards to claim 19, modified Tsuchida et al teaches a process for printing a substrate by an inkjet process, which comprises applying the aqueous pretreatment set forth above, drying the impregnated substrate ([0063]) and printing said impregnated substrate by the inkjet process ([0097]).

However, modified Tsuchida et al does not teach the process wherein the substrate is a textile.

Bagwell discloses a similar process for pretreating a *textile* substrate (paragraph 0015) for inkjet printing, which comprises applying an aqueous pretreatment liquor to said substrate and subsequently drying the impregnated substrate (paragraph 0021). Bagwell further teach printing cottons with pigments (paragraphs 0024-0025).

Therefore, it would have been obvious to one of ordinary skill in the art to use the pigments on cotton as disclosed by Bagwell in the process taught by modified Tsuchida et al because printing cotton materials with pigment inks are known in the art to be suitable methods for inkjet printing and would amount to nothing more than substitution of known materials and colorants for use in a known process.

***Response to Arguments***

12. Applicant's arguments filed regarding Tsuchida et al in view of Thetford et al have been fully considered but they are not persuasive. The examiner argues that Tsuchida and Thetford are both directed to ink jet printing substrates and while Tsuchida do not disclose the instantly claimed thickeners, Tsuchida clearly invite the inclusion of such thickening agents in the treatment compositions and Thetford exemplifies the benefits of these particular thickeners in inks for non-contact printing such as ink jet printing (page 8, lines 20-25). Thetford et al discloses the synthesis and use of various polyether/polyurethane association thickeners in polar media to provide good flow and leveling characteristics to water-borne coatings and latex systems (P1/L9-10). These benefits provide strong motivation incorporate the thickeners of Thetford disclosed for ink jet printing into the compositions of Tsuchida who also invite the inclusion of thickeners into their compositions for ink jet printing.

13. Applicant's arguments filed regarding Tsuchida et al in view of Thetford et al and further in view of Aoki have been fully considered but they are not persuasive. The

examiner argues that Aoki is not relied upon for treatment compositions and thickeners but rather only to demonstrate that it is conventional to print textile fabrics and Tsucida et al. also teach printing non-woven fabrics.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMINA KHAN whose telephone number is (571)272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5s off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lorna M Douyon/  
Primary Examiner, Art Unit 1796

/Amina Khan/  
Examiner, Art Unit 1796  
December 7, 2008